

Appl. No. 09/241,450
Amdt. dated March 2, 2006
Reply to Office action of December 2, 2005

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A composite comprising

(a) at least one body layer of a flexible, resilient, porous web having a roughly textured face, wherein the body layer comprises insulation having a density of about 0.5 to 7 pounds per foot³, and a thickness of at least about 0.5 inch (1.3 cm); and

(b) a flexible, resilient cover layer of a solid of a cured liquid cast on the roughly textured face to form a flexible, resilient composite,

in which the cover layer has a thickness dimension which is substantially uniform and

in which the cover layer is permanently embedded into the body layer from the roughly textured face to a depth less than the thickness dimension.

Claim 2 (Canceled).

Claim 3 (Previously Presented): The composite of claim 2 in which the body layer consists essentially of fiber glass or mineral fibers.

Claim 4 (original): The composite of claim 1 in which the cover layer is a flexible polymer selected from the group consisting of acrylic polymer, polyvinyl acetate, polystyrene, and a mixture of at least two of them.

Claim 5 (original): The composite of claim 4 in which the flexible polymer is acrylic polymer.

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Claim 6 (Previously Presented): The composite of claim 1 in which the thickness dimension is in the range of about 0.01 to 1 mm.

Claim 7 (Previously Presented): The composite of claim 6 in which the thickness dimension of the cover layer has a variation of at most 1 mm.

Claim 8 (Previously Presented): The composite of claim 6 in which the cover layer extends into the body layer to a distance from the roughly textured face at most about 95% of the thickness dimension.

Claim 9 (Previously Presented): The composite of claim 1 which comprises a second web of a nonwoven, net or scrim fabric on the roughly textured face of the body layer and in which the second web is embedded in the cover layer.

Claims 10- 28 (canceled)

Claim 29 (Currently Amended): An insulation composite produced by a process comprising the steps of:

placing in a substantially horizontal position a body layer of flexible, resilient insulating material having a density of about 0.5 to 7 pounds per foot³, and a thickness of at least about 0.5 inch (1.3 cm), the insulating material having an upwardly directed, roughly textured face;

casting a liquid capable of curing to a solid onto the textured face;

moving the body layer horizontally relative to a horizontally disposed coating bar having a downwardly facing corrugated axial profile defining alternating ridges and grooves such that the ridges contact the face; pressing a first portion of the liquid in proximity of the ridges into the body layer while passing a second portion of the liquid through the grooves; allowing the second portion of the liquid to settle in a substantially uniform thickness layer over the first portion of liquid ; and

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curing the liquid to a flexible, resilient solid, thereby producing a cover layer of substantially uniform thickness permanently embedded in the face of the body layer to form a flexible, resilient composite.

Claim 30 (Previously Presented): The composite of claim 1, wherein:
the body layer comprises glass fibers or mineral fibers defining the roughly textured face of the body layer.

Claim 31 (Previously Presented): The composite of claim 30 which further comprises a web of a non-woven, net or scrim fabric embedded in the cover layer.

Claim 32 (Currently Amended): The composite of claim 31 in which the body layer comprises a second face opposite to the face embedded by the cover layer and which composite further comprises an outer layer on the second face comprising ~~a material selected from the group consisting of metal foil, organic film, paper and a combination thereof.~~

Claim 33 (Previously Presented): The composite of claim 30 in which the thickness dimension of the cover layer at any location on the composite differs from the thickness dimension of the cover layer at all other locations on the composite by at most about 1 mm.

Claim 34 (Previously Presented): The composite of claim 30 in which the body layer comprises a second face opposite to the face embedded by the cover layer and which composite further comprises an outer layer on the second face comprising a material selected from the group consisting of metal foil, organic film, paper and a combination thereof.

Claim 35 (Previously Presented): The composite of claim 30 which is flexible.

Claim 36 (Previously Presented): The composite of claim 1 in which the body layer defines a height and the thickness of the cover layer is less than the height of the body layer.

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Claim 37 (Previously Presented): The composite of claim 39, wherein the body layer has a density of about 1-4 pounds per foot³.

Claim 38 (Previously Presented) The composite of claim 1, wherein the cover layer is applied to the roughly textured surface by:

casting the liquid onto the roughly textured surface;

moving the body layer relative to a coating bar having a downwardly facing corrugated axial profile defining alternating ridges and grooves such that the ridges contact the face;

pressing a first portion of the liquid in proximity of the ridges into the body layer while passing a second portion of the liquid through the grooves;

allowing the second portion of the liquid to settle in a substantially uniform thickness layer over the first portion of the liquid; and

curing the liquid to form the solid.

Claim 39 (Previously Presented). The composite of claim 1, wherein the body layer comprises insulation.

Claim 40 (Previously Presented). The composite of claim 39, wherein the body layer has a thickness of about 0.5 to 6 inches (1.3 to 15 cm).

Claim 41 (Previously Presented): The composite of claim 1, wherein the body layer comprises insulation having a density of about 1-4 pounds per foot³, and a thickness of about 0.5 to 6 inches (1.3 to 15 cm).

Claim 42 (New): The composite of claim 1 in which the body layer comprises a second face opposite to the face embedded by the cover layer and which composite further comprises an outer layer on the second face comprising metal foil.

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Claim 43 (New): A composite comprising

- (a) at least one body layer of a fiber glass or mineral fiber thermal and acoustical insulation material having a roughly textured face; and
- (b) a cover layer of a solid of a cured liquid cast on the roughly textured face to form a composite,

wherein the cover layer has a thickness dimension which is substantially uniform, and the cover layer is permanently embedded into the body layer from the roughly textured face to a depth less than the thickness dimension, and

the body layer has an exposed fiber glass or mineral fiber face opposite the roughly textured face.

Claim 44 (New): The composite of claim 43, wherein the composite is installed, so as to attenuate transmission of thermal energy or sound through a duct.

Claim 45 (New): The composite of claim 43, wherein the body layer is flexible and resilient when the cover layer is cast on the body layer, and the cover layer is flexible and resilient.

Claim 46 (New): The composite of claim 1, wherein the body layer is compressible.

Claim 47 (New): A composite comprising

- (a) at least one body layer of a fiber glass or mineral fiber thermal and acoustical insulation material having a roughly textured face, the body layer having a second face opposite to the roughly textured face;
- (b) a cover layer of a solid of a cured liquid cast on the roughly textured face to form a composite; and
- (c) an outer layer on the second face comprising metal foil,

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wherein the cover layer has a thickness dimension which is substantially uniform, and the cover layer is permanently embedded into the body layer from the roughly textured face to a depth less than the thickness dimension.